



Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11) EP 1 063 815 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:  
21.05.2003 Bulletin 2003/21

(51) Int Cl.7: H04L 12/24

(43) Date of publication A2:  
27.12.2000 Bulletin 2000/52

(21) Application number: 00111965.0

(22) Date of filing: 16.06.2000

(84) Designated Contracting States:  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU  
MC NL PT SE  
Designated Extension States:  
AL LT LV MK RO SI

(72) Inventor: Srinivasan, Sanjay  
Monroe, Snohomish County,  
Washington 98272 (US)

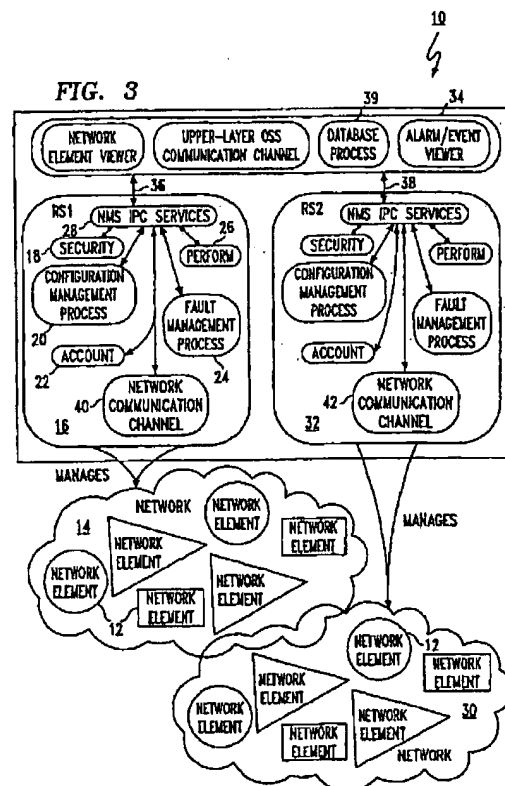
(74) Representative: Modiano, Guido, Dr.-Ing. et al  
Modiano, Josef, Pisanty & Staub,  
Baaderstrasse 3  
80469 München (DE)

(30) Priority: 23.06.1999 US 140593 P  
17.05.2000 US 572193

(71) Applicant: Srinivasan, Sanjay  
Monroe, Snohomish County,  
Washington 98272 (US)

(54) Design for scalable network management systems

(57) A system and methodology for building highly scalable Network Management Systems (NMS)s for the management of large voice and data networks is provided. The NMS of the present invention is designed to manage a plurality of network elements communicating through network controlled links. The elements are combined into management groups of no more than  $n$  elements. A first functional subsystem controls and manages the communication functions associated with a first group of elements. Each function or process inside the subsystem is guaranteed to communicate with only one instance of every other type of process or function. As additional network elements are added to the system, additional management groups are also added, one functional subsystem for every management group of elements. The plurality of other functional subsystems are substantially the same as the first functional subsystem. Limiting the management process to intra-subgroup communications greatly simplifies expansion of the system. When a total of  $m$  management groups exist, at least  $(m - 1)$  functional subsystems are replicated from the first NMS subsystem. Thus, the network is scaled up by using size-limited subsystems.



EP 1 063 815 A3



European Patent  
Office

## EUROPEAN SEARCH REPORT

Application Number  
EP 00 11 1965

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	US 5 768 501 A (LEWIS LUNDY) 16 June 1998 (1998-06-16)  * abstract * * figure 3 * * column 1, line 14-29 * * column 2, line 5-10 * * column 2, line 22-29 * * column 2, line 46-65 * * column 3, line 17-40 * * column 4, line 45-67 * * column 5, line 53 - column 6, line 25 * * column 7, line 12-38 * * column 13, line 16-24 *	1-6, 8-10, 12-16, 20,21	H04L12/24
A	---	7,11, 17-19	
A	RAM RAO VORUGANTI: "A GLOBAL NETWORK MANAGEMENT FRAMEWORK FOR THE '90S" IEEE COMMUNICATIONS MAGAZINE, IEEE SERVICE CENTER. PISCATAWAY, N.J., US, vol. 32, no. 8, 1 August 1994 (1994-08-01), pages 74-83, XP000471045 ISSN: 0163-6804 * page 76, column 2 *	1-6, 12-16	TECHNICAL FIELDS SEARCHED (Int.Cl.7)  H04L
The present search report has been drawn up for all claims			
Place of search <b>MUNICH</b>		Date of completion of the search <b>25 March 2003</b>	Examiner <b>Jurca, A</b>
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document		T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons  &: member of the same patent family, corresponding document	

EPO FORM 1503 03 02 (P04C01)

BEST AVAILABLE COPY

EP 00 11 1965

25-03-2003

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5768501 A	16-06-1998	US 6000045 A	07-12-1999
		US 6205563 B1	20-03-2001
		US 2001013107 A1	09-08-2001
-----			

EPO FORM PM59

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

BEST AVAILABLE COPY